

WHAT IS CLAIMED IS:

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1. A photographic film scanning system for scanning a film media containing at least one photographic image and for creating digital representations of the photographic image or images, the system comprising:

- a light source for projecting light through the film media;
- a light sensor for sensing the light projected through the film media and for generating pixel data;
- a film drive for advancing the film media between the light source and the light sensor;
- a lens located between the light source and the light sensor for directing the light projected through the film media onto the light sensor;
- film type selection means for manually selecting a type of film to be scanned;
- adjustment means responsive to the film type selection means for automatically changing the position of the lens and the position of the light sensor to provide proper focus for the selected type of film; and
- means for generating digital representations of the photographic images from the generated pixel data.

2. The film scanning system of claim 1 wherein the film type selection means includes a first position and a second position, the first position corresponding to 35mm film and the second position corresponding to APS film.

3. The film scanning system of claim 1 wherein the film type selection means includes a first position and a second position, the first position corresponding to 35mm film and the second position corresponding to 46mm film.

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4. The film scanning system of claim 1, and further comprising film color selection means for manually selecting a film color.

5. The film scanning system of claim 4 wherein the film color selection means includes a first, a second and a third position, the first position corresponding to negative film, the second position corresponding to positive film and the third position corresponding to black and white film.

6. The film scanning system of claim 4, and further comprising a light filter responsive to the film color selection means to move between the light source and the light sensor, the light filter reducing intensity of light incident on the light sensor when positioned between the light source and the light sensor.

7. The film scanning system of claim 1, and further comprising gain adjustment means for adjusting a gain of the pixel data, and offset adjustment means for adjusting an offset of the pixel data.

8. The film scanning system of claim 7 wherein the gain adjustment means and the offset adjustment means are programmable by user input.

9. The film scanning system of claim 1, and further comprising speed adjustment means for automatically adjusting the speed of the film drive based on user entered scanning resolution data.

10. The film scanning system of claim 1, and further comprising means for displaying the digital representations of the photographic images.

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11. The film scanning system of claim 1, and further comprising first and second position sensors, wherein the first position sensor detects when the lens reaches a first predetermined position, and the second position sensor detects when the light sensor reaches a second predetermined position.

12. The film scanning system of claim 1, and further comprising means for bending the film media longitudinally as it passes between the light source and the light sensor.

13. The film scanning system of claim 1, and further comprising a guide track consisting of a left guide to guide a first edge of the film media and a right guide to guide a second edge of the film media.

14. The film scanning system of claim 13, and further comprising guide track adjustment means responsive to the film type selection means for adjusting the distance between the left guide and the right guide.

15. The film scanning system of claim 1, and further comprising an infrared light filter located between the light source and the light sensor, the infrared light filter for preventing infrared light from being projected on the light sensor.

16. The film scanning system of claim 1, and further comprising a light tunnel located between the light source and the light sensor, the light tunnel preventing substantially all light from reaching the light sensor except the light projected through the film media.

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17. The film scanning system of claim 1, and further comprising a code sensor for projecting light through a first edge of the film media where coded data is located, the code sensor generating signals representative of the coded data on the film media.

18. A scanner for generating pixel data from photographic film media such as film strips and slides, the scanner comprising:

a first and a second inlet, the first inlet adapted to receive a plurality of types of photographic film strips, the second inlet adapted to receive slides;

film drive means for advancing the media through the scanner;

a first guide track coupled to the first inlet for guiding the film strips through the scanner;

a second guide track coupled to the second inlet for guiding the slides through the scanner;

a light source for projecting light through the film media;

a light sensor for sensing the light projected through the film media and for generating pixel data based upon the intensity of the light sensed; and

a lens located between the light source and the light sensor for directing the light projected through the film media onto the light sensor.

19. The scanner of claim 18, and further comprising a film type selection means for manually selecting a type of film to be scanned.

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20. The scanner of claim 19 wherein the film type selection means includes a first position and a second position, the first position corresponding to 35mm film and the second position corresponding to APS film.

21. The scanner of claim 19 wherein the film type selection means includes a first position and a second position, the first position corresponding to 35mm film and the second position corresponding to 46mm film.

22. The scanner of claim 18, and further comprising film color selection means for manually selecting a film color.

23. The scanner of claim 22 wherein the film color selection means includes a first, a second and a third position, the first position corresponding to negative film, the second position corresponding to positive film and the third position corresponding to black and white film.

24. The scanner of claim 22, and further comprising a light filter responsive to the film color selection means to move between the light source and the light sensor, the light filter reducing intensity of light incident on the light sensor when positioned between the light source and the light sensor.

25. The scanner of claim 18, and further comprising gain adjustment means for adjusting a gain of the pixel data, and offset adjustment means for adjusting an offset of the pixel data.

26. The scanner of claim 25 wherein the gain adjustment means and the offset adjustment means are programmable by user input.

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27. The scanner of claim 18, and further comprising speed adjustment means for automatically adjusting the speed of the film drive means based on user entered scanning resolution data.

28. The scanner of claim 18, and further comprising means for displaying the pixel data.

29. The scanner of claim 19, and further comprising means responsive to the film type selection means for automatically changing the position of the lens and the position of the light sensor to provide proper focus for the selected film type.

30. The scanner of claim 29, and further comprising first and second position sensors, wherein the first position sensor detects when the lens reaches a first predetermined position, and the second position sensor detects when the light sensor reaches a second predetermined position..

31. The scanner of claim 18, and further comprising means for bending the film media longitudinally as it passes between the light source and the light sensor.

32. The scanner of claim 19 wherein the first guide track comprises a left guide to guide a first edge of a film strip and a right guide to guide a second edge of a film strip, and the scanner further comprises guide track adjustment means responsive to the film type selection means for adjusting the distance between the left guide and the right guide.

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33. The scanner of claim 18, and further comprising an infrared light filter located between the light source and the light sensor, the infrared light filter for preventing infrared light from being projected on the light sensor.

34. The scanner of claim 18, and further comprising a light tunnel located between the light source and the light sensor, the light tunnel preventing substantially all light from reaching the light sensor except the light projected through the film media.

35. The scanner of claim 18, and further comprising a code sensor for projecting light through a first edge of the film media where coded data is located, the code sensor generating signals representative of the coded data on the film media.

36. A film scanning system comprising:
a computer;
a high-speed interface coupled to the computer;
a scanner coupled to the high-speed interface, the scanner comprising a plurality of subsystems in communication with the computer through the high-speed interface, each subsystem including a microprocessor, each subsystem assigned a unique identifier, the scanner generating pixel data representative of scanned photographic images, the scanner providing the generated pixel data to the computer through the high-speed interface.

37. The film scanning system of claim 36 wherein the high-speed interface is based on the IEEE 1394 standard.

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38. The film scanning system of claim 36 wherein the pixel data provided to the computer has a color depth of 12 to 16 bits per color, and 3 colors per pixel.

39. A method of scanning a film strip containing a plurality of photographic images and creating a corresponding plurality of digital representations of the photographic images, the method comprising:

projecting light through the film strip with a light source;
sensing the light projected through the film strip with a light sensor
and generating pixel data based on the light sensed;
advancing the film strip between the light source and the light
sensor;
directing the light projected through the film strip onto the light
sensor with a lens;
manually selecting a type of film to be scanned;
changing the position of the lens to provide proper focus for the
selected film type; and
generating digital representations of the photographic images from
the generated pixel data.

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